

Comparisons are made between the wake profiles for different values of the rotor/stator spacing. With the values of XSPAC in the test0 test case used as the baseline, rotor/stator spacing was decreased by 4 inches and was increased by 4 inches. These results were obtained by modifying the test0 test case provided with the V072 code, so that in:

Case 1: XSPAC=12.704,12.719,12.760,13.251,14.028

Case2: XSPAC=8.704,8.719,8.760,9.251,10.028

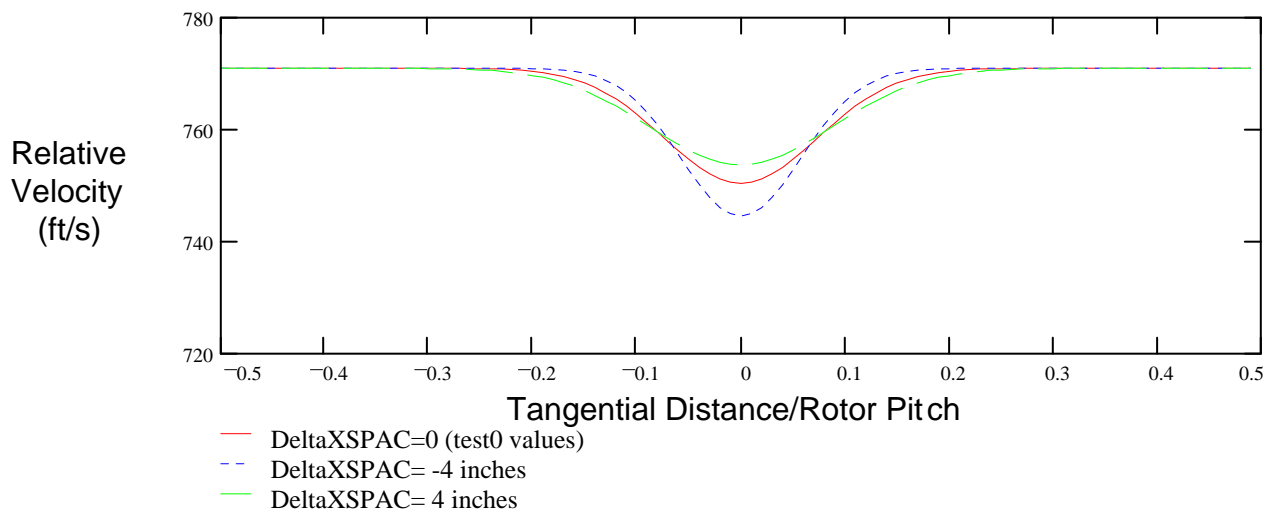
Case3: XSPAC=16.704,16.719,16.760,17.251,18.028

For each of these cases, hub and tip vortices were not included (IHBVTX = 0 AND ITPVTX = 0)

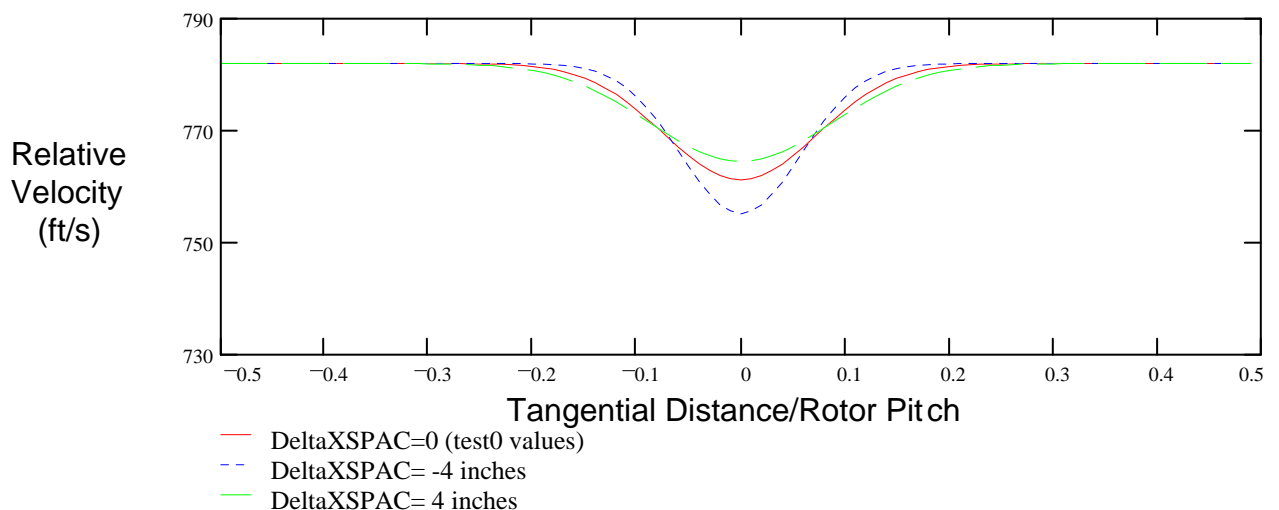
One hundred points per profile are plotted here. Normally, V072 writes 11 points per profile into the *.v072out file. The subroutine wrte78.f (found in the /v070_v078lib directory) was modified to output the desired number of normalized relative velocity values (WOWFRE) and normalized tangential distances (YNORM) into separate files suitable for plotting.

In these plots, Relative Velocity = WOWFRE*WFREE and YNORM = Tangential distance/Rotor Pitch

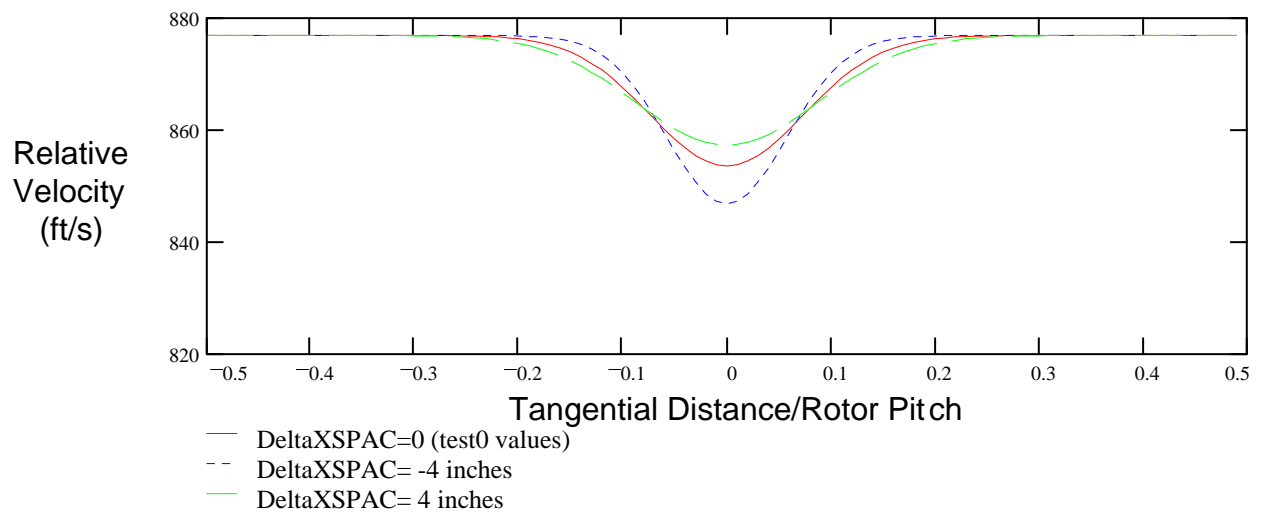
Comparison of Wake Profiles for Different Rotor/Stator Spacing
at a Radius of 27.87 Inches



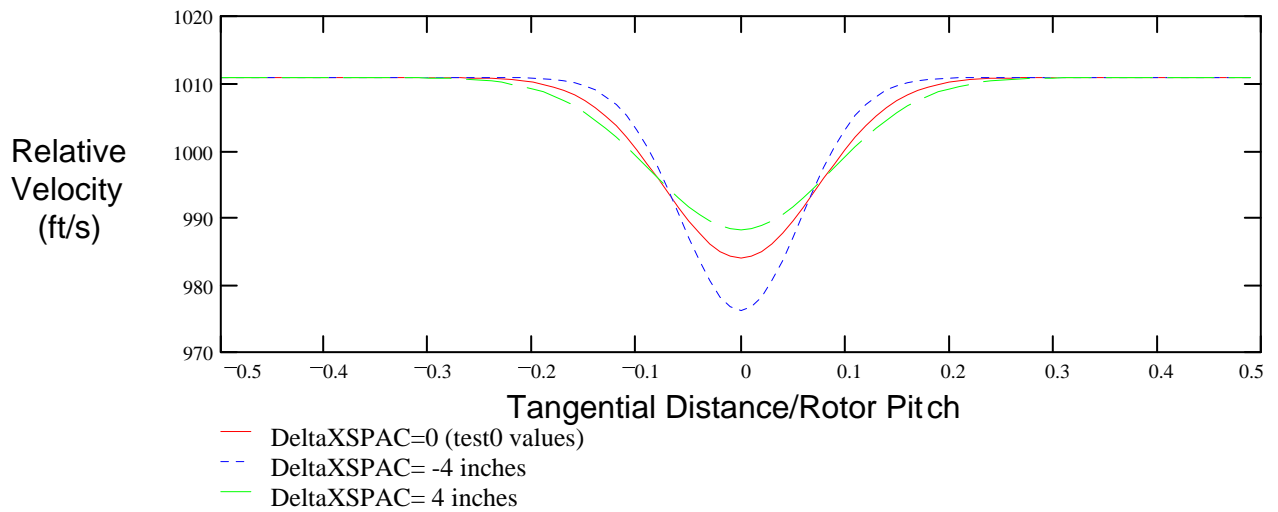
Comparison of Wake Profiles for Different Rotor/Stator Spacing
at a Radius of 33.00 Inches



Comparison of Wake Profiles for Different Rotor/Stator Spacing
at a Radius of 38.00 Inches



Comparison of Wake Profiles for Different Rotor/Stator Spacing
at a Radius of 42.00 Inches



Comparison of Wake Profiles for Different Rotor/Stator Spacing
at a Radius of 46.26 Inches

